

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70) 09/868,584

Applicant's or agent's file reference P024368WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB01/01488	International filing date (day/month/year) 02/04/2001	Priority date (day/month/year) 03/04/2000
International Patent Classification (IPC) or national classification and IPC F16J15/06		
Applicant HYJOIN LIMITED et al.		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 01/11/2001	Date of completion of this report 07.08.2002
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Donnelly, C Telephone No. +49 89 2399 2763 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB01/01488

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-12 as originally filed

Claims, No.:

1-30 as received on 05/11/2001 with letter of 30/10/2001

Drawings, sheets:

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB01/01488

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-30
	No:	Claims	
Inventive step (IS)	Yes:	Claims	4,5,9-11,13
	No:	Claims	1-3,6-8,12,14-30
Industrial applicability (IA)	Yes:	Claims	1-30
	No:	Claims	

2. Citations and explanations
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB01/01488

Re Item V

Patent document DE-U-1762329 (D1), DE-U-1953035 (D2) and US-A-3355057 (D3) (see col. 2, line 35 to col. 3, line 16) describe a gasket for a pipe joint between two pipe ends, the gasket comprising:

a sealing portion (7;2;20) for producing a seal between the two pipe ends; and
a gripping portion (8c,8d;4;21,22) for gripping at least one of the pipe ends to hold the gasket in position,

wherein the sealing portion and the gripping portion are manufactured in one piece from elastomeric material.

The subject-matter of claim 1 differs therefrom in that the sealing portion and the gripping portion are manufactured in one piece from engineering plastics material.

However, the use of engineering plastics materials for the manufacture of gaskets is described for example in WO-A-0017548 (D4) (corresponds to PCTGB9903050 cited on page 1 of the application). The skilled man is taught by D4 the relative advantages and disadvantages of using either elastomers or plastic materials and would apply this knowledge to D1, D2 or D3 in order to arrive at the subject-matter of claim 1 without the exercise of any inventive activity.

Thus, the subject-matter of claim 1 does not meet the requirements of Article 33(3) PCT as it does not involve an inventive step.

Documents D1 also describes a gasket comprising the features specified in claims 2, 7,8,12 and D2 describes a gasket comprising the features of claims 3 and 6.

Thus the subject-matter of claims 2,3,6-8 and 12 also does not meet the requirements of Article 33 (3) PCT.

Patent document US-A-5992595 (D5) (see col. 4, line 53 to col. 5, line 2 and fig 6A) describes a gasket with locating means wherein the locating means comprise a plurality of protrusions (55) spaced about the gasket.

Thus, the subject-matter of claims 14-16 does not meet the requirements of Article

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB01/01488

33(3) PCT.

Dependent claims 17-23 do not appear to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, in the light of documents D5 and US-A-5145219.

Dependent claims 24-30 do not appear to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, as they merely refer to commonly used materials or clamping arrangements.

Replaced
by Art 34
Amendment

CLAIMS

1. A gasket for a pipe joint between two pipe ends, the gasket comprising:
a sealing portion for producing a seal between the two pipe ends and
5 a gripping portion for gripping at least one of the pipe ends to hold the
gasket in position,
wherein the sealing portion and the gripping portion are formed integrally.
2. A gasket as claimed in claim 1, wherein the gripping portion is configured to
10 self-center the gasket about a pipe bore.
3. A gasket as claimed in claim 1 or claim 2, wherein the gripping portion
comprises at least two resilient structures defining bearing surfaces for gripping a
pipe end.
- 15 4. A gasket as claimed in any one of claims 1 to 3, wherein the gripping
portion includes two T-shaped resilient structures:
5. A gasket as claimed in claim 4, wherein the T-shaped resilient structures
20 are spaced by approximately 180° or 120° about the gasket.
6. A gasket as claimed in any one of claims 1 to 5, wherein the gripping
portion includes four or six arms spaced about the circumference of the gasket,
each arm including a bearing surface for gripping a pipe end.
- 25 7. A gasket as claimed in any one of claims 1 to 6, further comprising means
for applying a pre-stress to the gripping portion so that the gripping portion applies
a greater gripping force during use.
- 30 8. A gasket as claimed in claim 7, wherein the means for applying a pre-stress
comprises at least one member held between the sealing portion and the gripping
portion.

9. A gasket as claimed in claim 8, wherein the or each member is positioned by means of lugs formed as part of the gasket.

10. A gasket as claimed in claim 9, wherein the lugs are offset on both sides of
5 the or each member.

11. A gasket as claimed in any one of claims 8 to 10, wherein the or each member is manufactured from metal and acts as a stop between the pipe ends during use.

10

12. A gasket as claimed in any one of claims 8 to 11, wherein the or each member is a metal wire.

13. A gasket as claimed in any one of claims 8 to 12, wherein the member
15 extends through an arc of more than 270°.

14. A gasket as claimed in any preceding claim, further comprising:
locating means comprising a plurality of protrusions spaced about the
gasket for positioning the gasket relative to the pipe ends.

20

15. A gasket for a pipe joint between two pipe ends, the pipe ends defining at least one annular recess for receiving a portion of the gasket, wherein the gasket includes:

a sealing portion for producing a seal between the two pipe ends and
25 locating means for positioning the gasket relative to the pipe ends,

wherein the locating means comprise a plurality of protrusions spaced about the gasket for locating in the annular recess of a pipe end to position correctly the gasket relative to the pipe ends.

30 16. A gasket as claimed in claim 14 or claim 15, wherein the sealing portion and the locating means are formed integrally.

17. A gasket as claimed in any one of claims 14 to 16, wherein the locating means are configured to self-center the gasket about a pipe bore.

18. A gasket as claimed in any one of claims 14 to 17, wherein the locating means comprise at least three protrusions defining bearing surfaces for seating in an annular recess in a pipe end.

19. A gasket as claimed in any one of claims 14 to 18, wherein the locating means include ten or more protrusions.

10

20. A gasket as claimed any one of claims 14 to 19, wherein the protrusions are bumps, truncated cones or stipples.

21. A gasket as claimed in any one of claims 14 to 20, wherein the protrusions have flat tops.

22. A gasket as claimed in any one of claims 14 to 21, wherein the protrusions extend from both sides of the gasket.

23. A gasket as claimed in any one of claims 14 to 22, wherein each protrusion is substantially round in plan.

24. A gasket as claimed in any one of claims 14 to 23, wherein each protrusion is substantially the same.

25

25. A gasket as claimed in any preceding claim, wherein the gasket is manufactured from plastics material.

26. A gasket as claimed in claim 25, wherein the manufacture is achieved by moulding or casting.

30

27. A gasket as claimed in claim 25 or claim 26, wherein the plastics material is an engineering plastics material, such as PEEK.

28. A gasket as claimed in any preceding claim, wherein the sealing portion comprises a bore surface for alignment parallel with a pipe bore and an adjacent raised surface perpendicular to the bore for forming a seal between pipe ends.

5

29. A gasket substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

30. A pipe joint comprising two pipe ends defined by ferrules, a clamp acting on
10 the ferrules to close the joint and a gasket according to any preceding claim between the ferrules.

31. A pipe joint as claimed in claim 30, wherein each ferrule includes an annular recess for receiving protrusions of the locating means.

15

32. A pipe joint as claimed in claim 30 or claim 31, wherein the gasket includes a metal stop against which the ferrules bear to prevent overtightening of the clamp.

20 33. A pipe joint as claimed in claim 32, wherein the ferrules contact the sealing portion of the gasket before the stop, during clamping, thereby resulting in a sealing pressure being applied to the gasket.

34. A pipe joint as claimed in any one of claims 30 to 33, wherein resiliency of
25 the ferrules is utilised to apply a continual pressure between the ferrules and the sealing portion of the gasket following clamping.

35. A pipe joint substantially as hereinbefore described with reference to and as shown in the accompanying drawings.